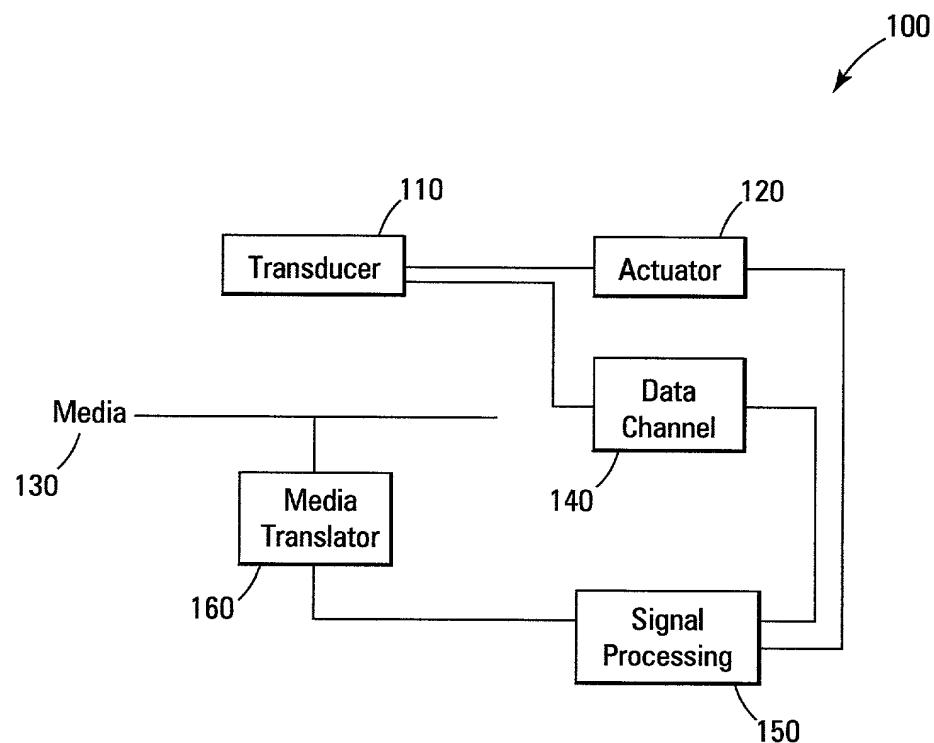


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*Fig. 1*

Inventor: Choe, G.

Title: A METHOD AND APPARATUS FOR PROVIDING PRECISE CONTROL OF MAGNETIC COUPLING

FIELD IN NiMn TOP SPIN VALVE HEADS AND AMPLITUDE ENHANCEMENT

Docket no.: SJ09-2001-0040US1 / 501.388US01 Serial Number 10/038,125

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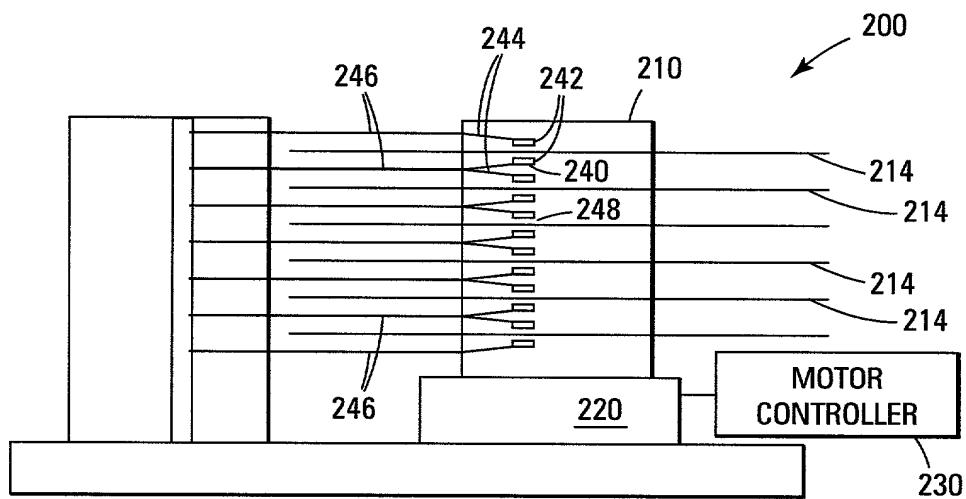


Fig. 2

Inventor: Choe, G.

Title: A METHOD AND APPARATUS FOR PROVIDING PRECISE CONTROL OF MAGNETIC COUPLING FIELD IN NiMn TOP SPIN VALVE HEADS AND AMPLITUDE ENHANCEMENT

Docket no.: SJ09-2001-0040US1 / 501.388US01 Serial Number 10/038,125

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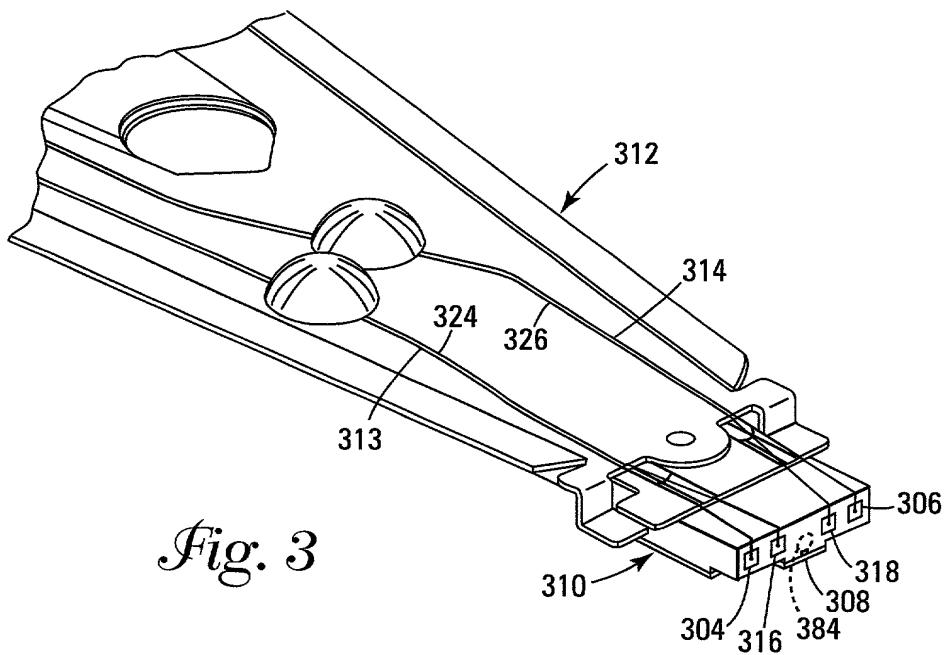


Fig. 3

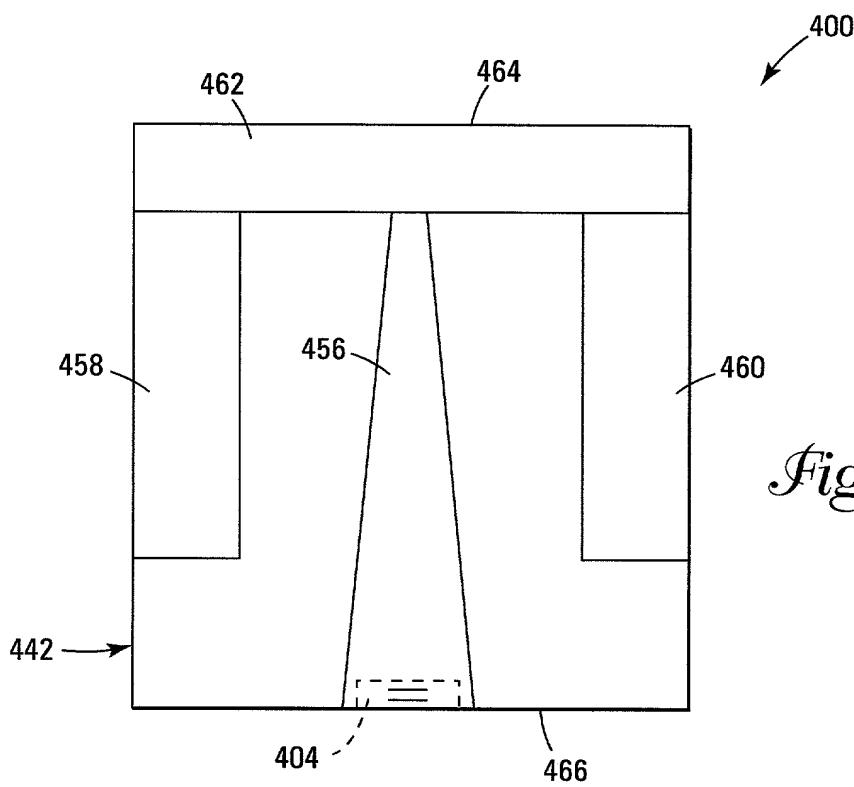
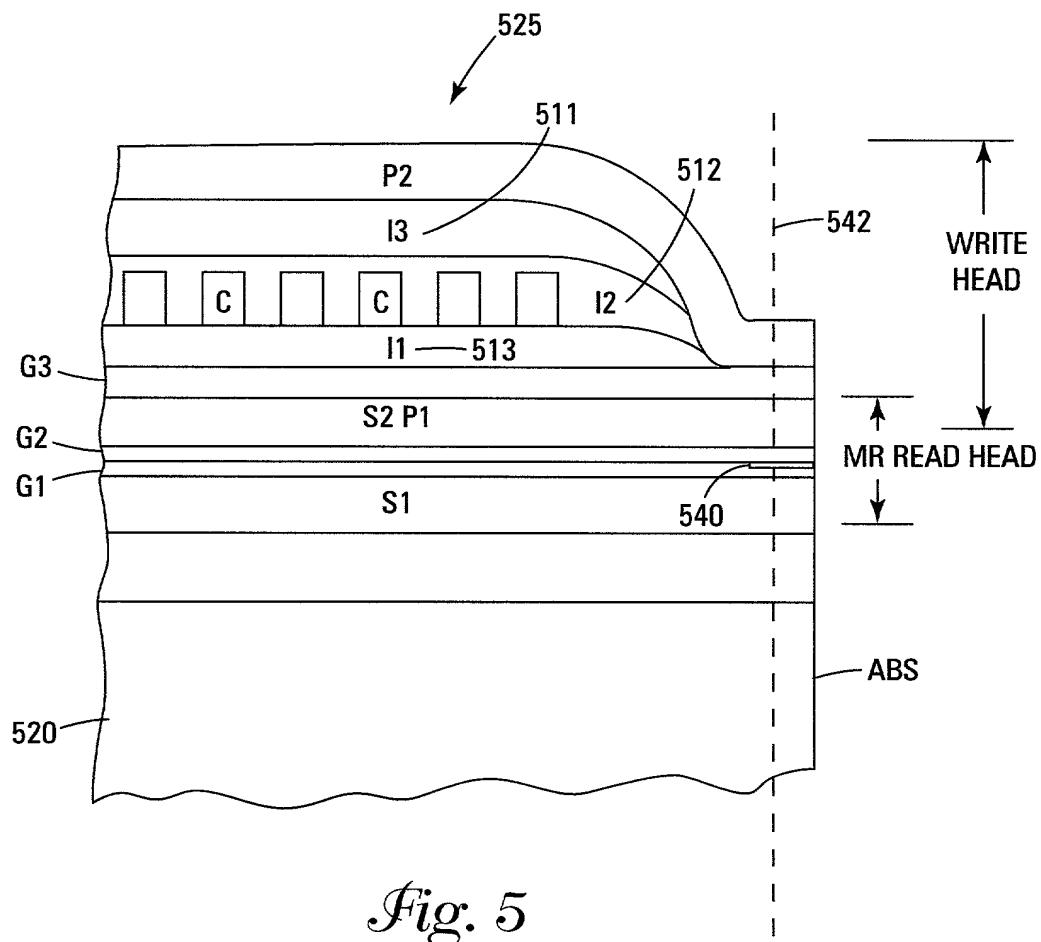
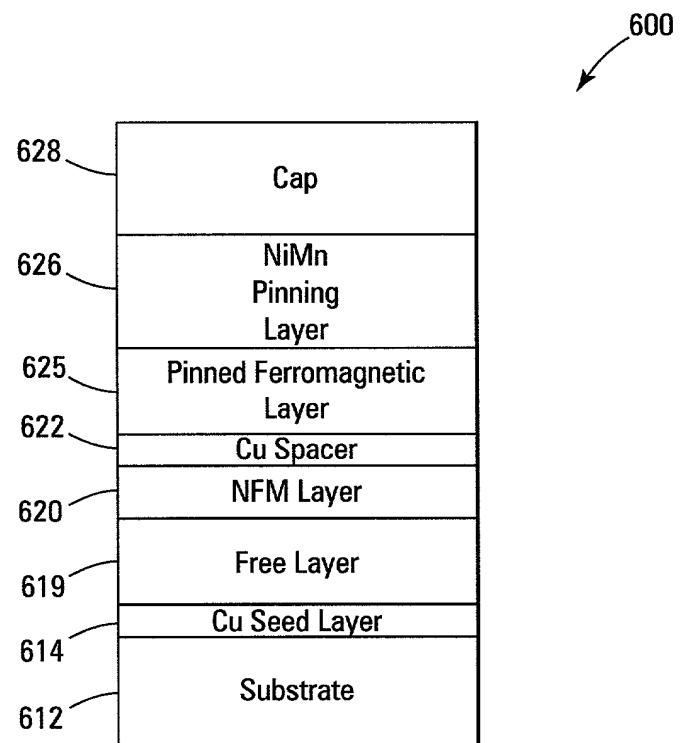


Fig. 4



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*Fig. 6*

Inventor: Choe, G.

Title: A METHOD AND APPARATUS FOR PROVIDING PRECISE CONTROL OF MAGNETIC COUPLING

FIELD IN NiMn TOP SPIN VALVE HEADS AND AMPLITUDE ENHANCEMENT

Docket no.: SJ09-2001-0040US1 / 501.388US01 Serial Number 10/038,125

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	As-deposited free layer		Annealed free layer at 250°, 5 hrs	
	λ_i	λ_b	λ_i	λ_b
Without oxidation	6×10^{-5} Å	-3.2×10^{-6} Å	8×10^{-5} Å	-0.9×10^{-6} Å
With Cu seed and spacer oxidation	4×10^{-5} Å	-3.1×10^{-6} Å	4×10^{-5} Å	-1.5×10^{-5} Å

Fig. 7

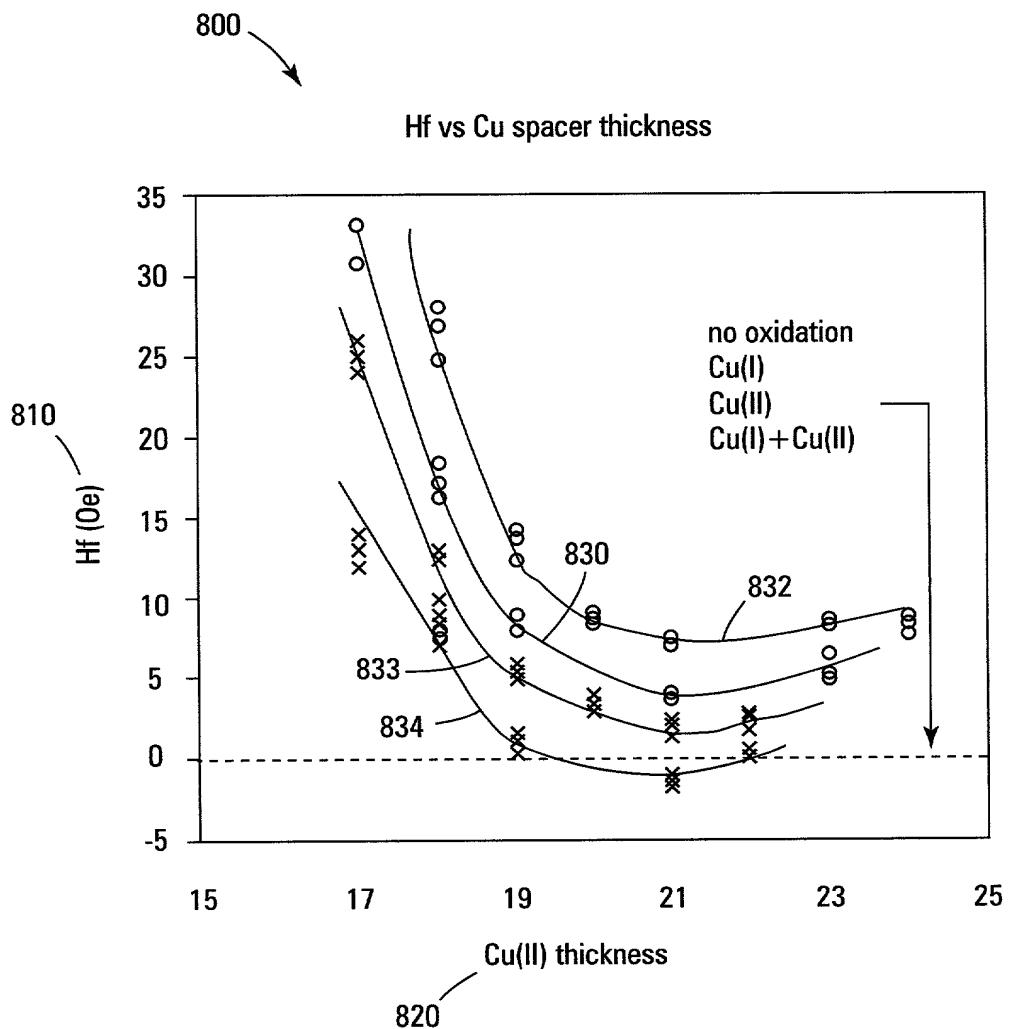


Fig. 8

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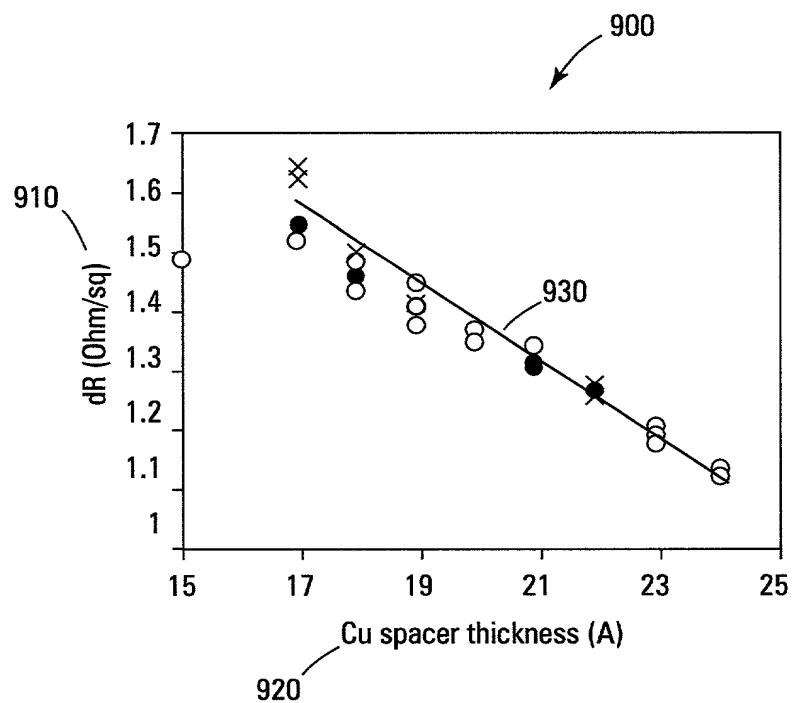
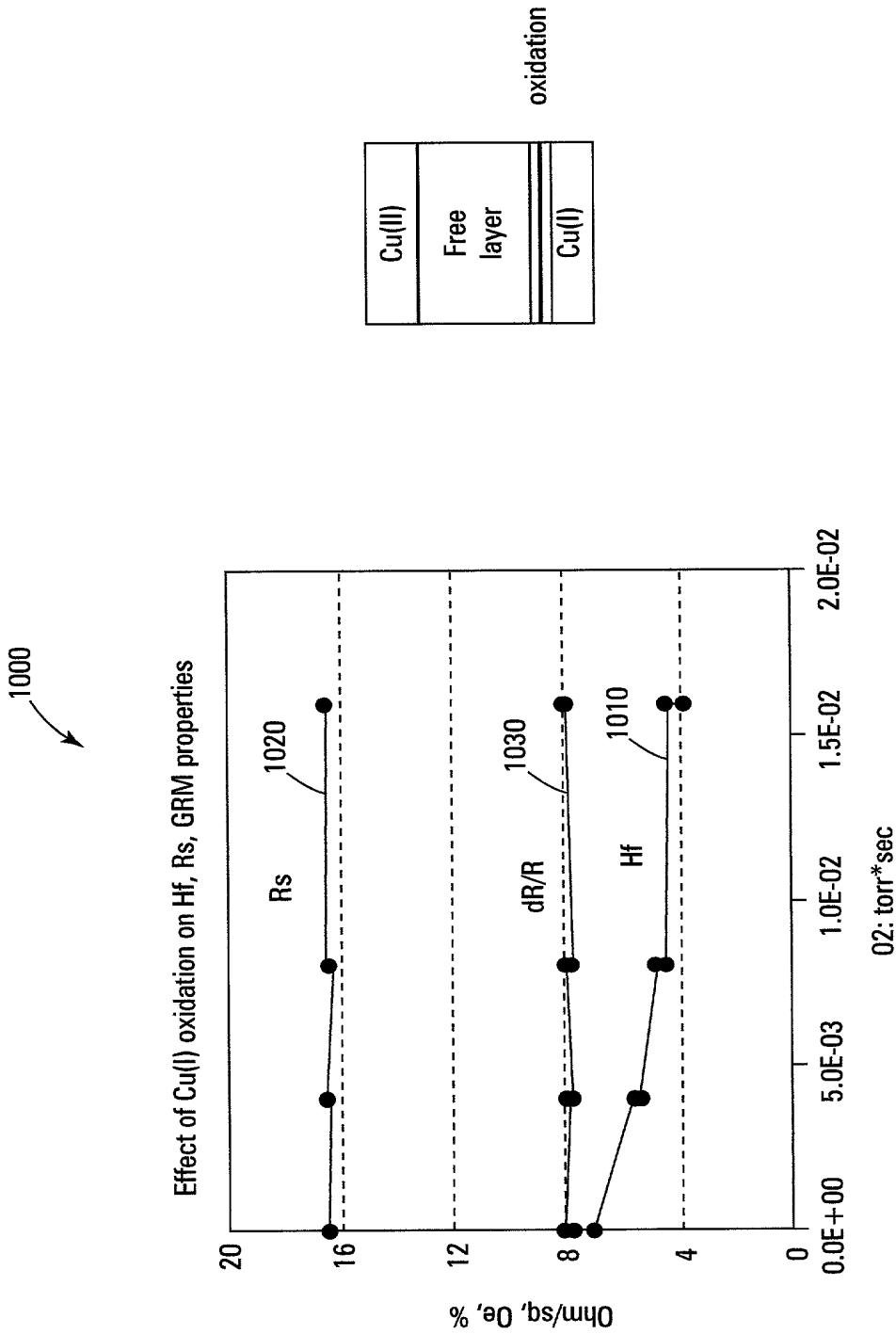


Fig. 9

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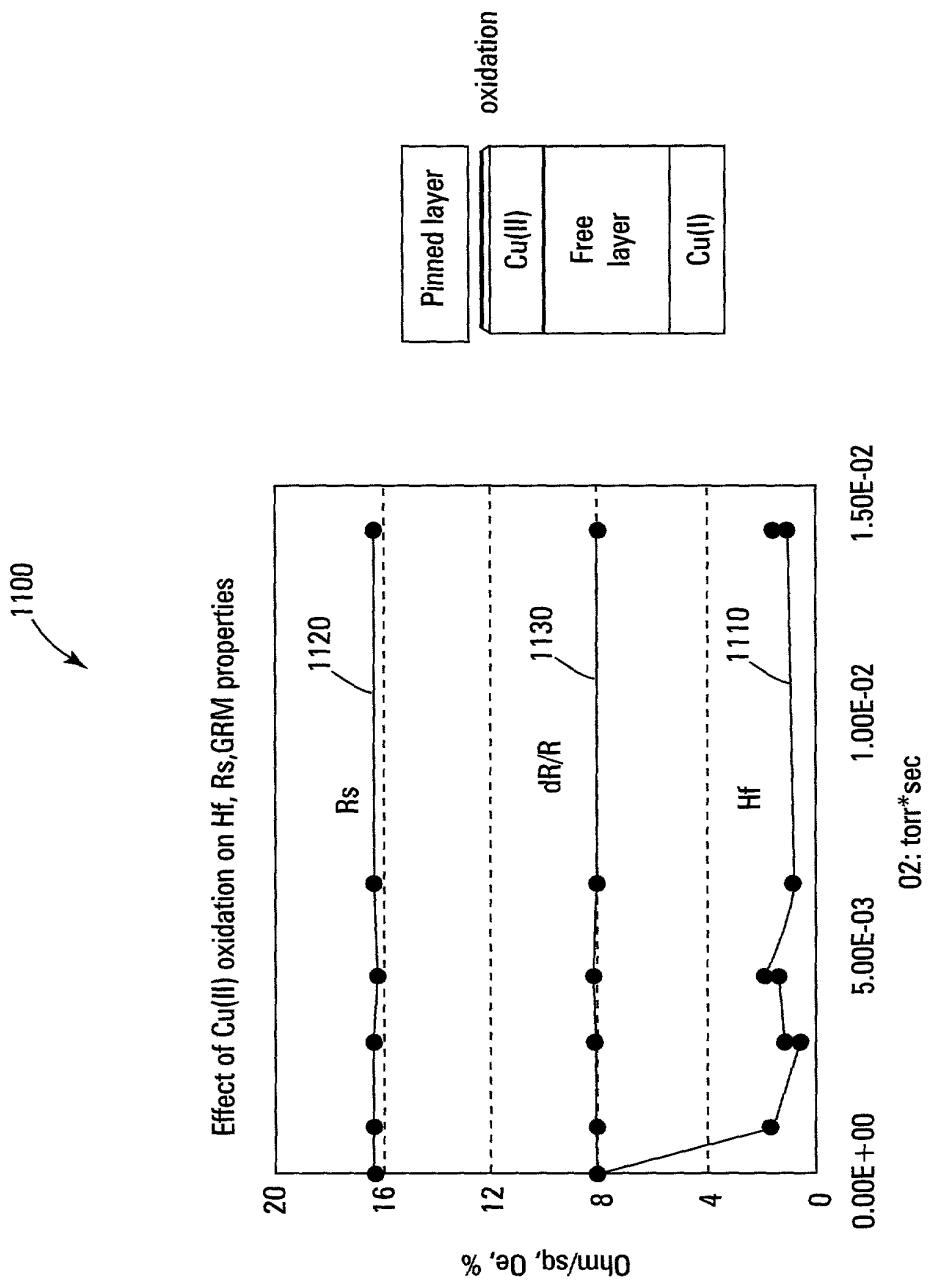
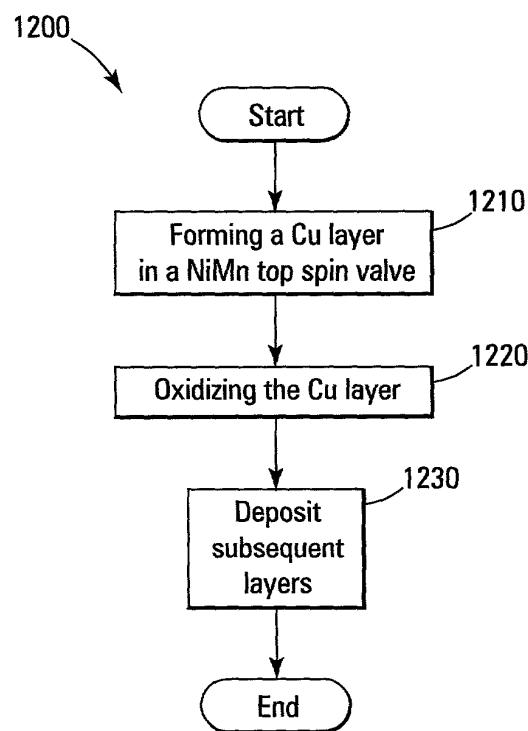


Fig. 11

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*Fig. 12*